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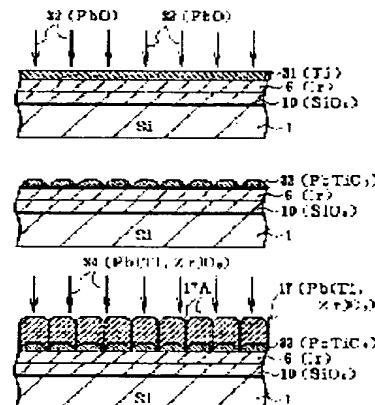
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(54) MANUFACTURE OF FERROELECTRIC CAPACITOR AND MANUFACTURE OF FERROELECTRIC MEMORY DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To form a high-quality ferroelectric thin film by forming excellent crystal nuclei by depositing a metallic or metal oxide thin film, a metal oxide material, and a ferroelectric material by sputtering, etc.

SOLUTION: After an Ir thin film 6 is formed on a silicon oxide film 10 formed on an Si substrate 1, a Ti film 31 is deposited on the Ir thin film 6 at a room temperature. Then a PbTiO₃ film 33 is formed as crystal nuclei by depositing PbO 32 on the Ti film 31 by sputtering using a PbO ceramic target at a temperature higher than the crystallization temperature of PbTiO₃ and a Pb(Ti, Zr)O₃ thin film 17 is deposited on the film 33 by sputtering Pb(Ti, Zr)O₃ 34. Since the formed PbTiO₃ film 33 becomes perovskite crystal nuclei, the particles 17A of the deposited Pb(Ti, Zr)O₃ thin film 17 grow in columnar shapes and excellently deposit due to the crystal nuclei of the base film 33.



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